

### **REMARKS**

Entry of the foregoing amendments and reconsideration of the application in view of the above amendments and the following remarks are respectfully requested.

#### **The Office Action**

Claims 2, 5, 9, 10, 14-21, and 24-34 were presented for examination.

Claims 2, 5, 9, 10, 14-19, 21, and 24-34 are now in the application.

Claims 10, 14, 17, 19, 24, 29-30 and 33 stand rejected under 35 U.S.C. §102(b) as being anticipated by Norum (U.S. Patent No. 5,923,344).

Claims 2, 5, 16, and 20-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Norum (U.S. Patent No. 5,923,344) in view of Stanley (U.S. Patent No. 5,212,497).

Claims 9, 15, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Norum (U.S. Patent No. 5,923,344) in view of Niikura (U.S. Patent No. 5,576,744).

Claims 25-28, 31, 32, and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Norum (U.S. Patent No. 5,923,344) in view of Gast (U.S. Patent No. 6,367,903).

Claims 10, 14, 17, 21, 24-26, and 32 have been amended.

Claim 20 has been cancelled.

#### **The Non-Art Amendments**

The specification has been amended to correct minor mistakes. The amendments to the specification do not represent any new matter.

#### **Claims 14-16 are Distinguished over References**

Claim 14 calls for a method of forming an image with in an image forming system. The method includes the steps of forming sets of grouped ink ejectors, the groupings determined based on previously entered ink droplet compensation values; discharging a first set of ink droplets and a second set of ink droplets from the printhead onto a print medium to form an image; determining differences in distance between the first set of ink droplets and the second set of ink droplets once deposited on the print medium; presenting the grouped ejectors to a user in one of ascending and descending droplet compensation value ranking; and updating, by the user,

compensation values for a selected set of ink ejectors by a constant value based on the determined differences. Norum discloses generating, at the time of manufacture, a data file of ink drop compensation values. Individual ink drops are placed on the print medium. The misalignment of each ink drop is measured relative to the vertical line. Norum does not disclose or suggest measuring differences between sets of ink drops. Nor does Norum disclose or suggest grouping of ink ejectors. While Gast does disclose grouping of ink ejectors, it is based on location and not on the now claimed previously entered compensation values. (Primitives in Fig. 3). The distance from the centroids of all the primitives to a reference primitive is calculated from the data taken by a line sensor. (Col. 6, lines 49-51). The distances are compared to a predetermined ideal distance. (Col. 6, lines 51-52). Neither Norum, Gast, nor a combination of the references discloses or suggests forming sets of ejectors based on previously entered compensation values, detecting difference between the sets of deposited ink drops and adjusting sets of grouped ejectors presented in ascending or descending order by a constant compensation value.

It is therefore respectfully submitted that claim 14 and claims 15-16, dependent on claim 14, distinguish patentably and unobviously over Norum.

**Claims 17-19, 21 and 32-34 are Distinguished over References**

Claim 17 calls for controlling the printhead based on a difference in velocity, which is determined based on differences between a parameter of the first ink droplet and a parameter of the second ink droplet measured after formation of an image on an imaging medium. Norum discloses generating of the compensation values based on misalignment of each ink drop as measured relative to the vertical line. The operation takes place at the printer's manufacturer's facility, prior to the shipment of the printer to the end user, to develop a set of factory compensation values. Stanley is directed to normalizing the ink jet drop ejection velocity. The ink drops are observed by an operator on the monitor. The operator uses a joystick to control stepper motor that adjusts the resistance of potentiometer to control the velocity of the ink drops ejection. Neither Norum, Stanley, nor a combination of the references discloses or suggests the claimed control of the printhead by the end user based on differences in velocity of ejecting the

ink drop, wherein the differences in velocity are determined by the end user based on differences in measurements between parameters of the ink drops deposited on the print medium.

It is therefore respectfully submitted that claim 17 and claims 18-19, 21 and 32-34, dependent on claim 17, distinguish patentably and unobviously over Norum and Stanley.

**Claims 24, 2, 5, 9-10, 25-28, and 31 are Distinguished over References**

Claim 24 calls for among other limitations: a printhead signature correction method for a high resolution printer system, deployed at an end user operation site. Norum discloses generating, at the time of manufacture, a data file of ink drop compensation values. After manufacture, a printhead is tested for dot alignment. (Col. 2, line 11). While still within the factory, the alignment information is encoded within the printhead or on the pen. (Col. 2, lines 10-13 and fig. 7). The dot shift information might be generated by a user. (Col. 2, lines 17-18 and fig. 8). The dot shift data might also be generated by a printer, automatically. (Col. 2, lines 23-24 and fig. 9). Each of the methods disclosed in Norum and referred to by the Examiner, starts with a manufacture of pen and printer as seen in steps 31, 41 and 51 of figures 7, 8, and 9 respectively. The dot shift data is determined and stored by the manufacturing technician while the printer is still in the factory. Norum does not disclose or suggest updating the factory provided dot compensation values once the printer is out of the door and in use by the consumers. The compensation values are created and stored while the printer is within the factory. In contrast to Norum, Applicant's method is directed to updating the data compensation file, originally created at the manufacturing facility, by the end user, at the end user's operation facility. Neither Norum, nor a combination of the references discloses or suggests permitting the end user to update the factory provided compensation values data set with the parameters generated by the end user and regulating operation of the printer by a use of compensation values updated by the end user.

It is therefore respectfully submitted that claim 24 and claims 2, 5, 9-10, 25-28, and 31, dependent on claim 24, distinguish patentably and unobviously over Norum.

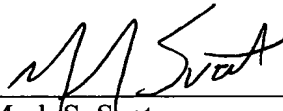
In addition to claim 28 being distinguished based on its relation to claim 24, claim 28 calls for adjusting the compensation values in the data file reducing drop placement errors to plus or minus four microns in a high addressability direction. It is alleged in the Office Action that Gast discloses adjusting ink ejectors by groups to reduce drop placement errors to be less than four microns. Gast discloses determining a positive error for each primitive. The distance from the centroid of each primitive is calculated in relation to a reference primitive. The distance is further compared to a predetermined value and a positive error is determined. These errors are typically from a few microns to a few tens of microns. (Col. 6, lines 49-58). Applicant submits that "few" is an ambiguous term usually interpreted as amounting to a small imprecise number, which is not necessarily four or smaller. It is respectfully submitted that this ground for rejection of claim 28 be withdrawn.

Applicant has reviewed additional art cited but not applied. As it is felt that the applied art is more relevant to the application, Applicant will not burden the record with a further discussion of this art.

### CONCLUSION

In view of the foregoing, it is submitted all claims are now in condition for allowance. An early notice to that effect is therefore earnestly solicited.

Respectfully submitted,  
FAY, SHARPE, FAGAN,  
MINNICH & McKEE, LLP

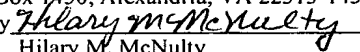



---

Mark S. Svat  
Reg. No. 34,261  
1100 Superior Avenue, 7th Floor  
Cleveland, Ohio 44114-2518  
(216) 861-5582

### CERTIFICATE OF MAILING

I hereby certify that this Amendment AA is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on July 16, 2003.

By   
Hilary M. McNulty